INSTRUCTION MANUAL
FOR

DECS-300

ISOLATION MODULE

Part Number: 9 3229 00 100

Basler Electric

Publication: 9 3229 00 990
Date: November, 1998

SECTION 1 • GENERAL INFORMATION

GENERAL DESCRIPTION

The Isolation Module is an integral part of the DECS-300 system. The Isolation Module measures the field voltage and current and develops two analog voltages for feedback signals to the DECS-300. It also provides electrical isolation between sensed inputs and the voltage outputs.

SPECIFICATIONS

The physical and electrical specifications of the excitation system is provided in the following paragraphs.

Electrical Specifications

Input Power:	±12 Vdc from DECS-300.
Field Voltage Sensing Ranges:	Minus 300 to plus 300 % of the five nominal ranges: 32 V, 63 V, 125 V, 250 V, and 375 V.
Field Current Sensing Ranges:	0 to 300 % of the two nominal shunt ranges: 50 millivolts and 100 millivolts.
Power Output:	
Field Voltage Signal	0.9 to 9.1 volts dc with 5.0 volts dc = zero field voltage.
Field Current Signal	2.0 to 9.5 volts dc with 2.0 volts dc = zero field current.

Physical Specifications

Operating Temperature:	-40°C (-40°F) to +60°C (+140°F).
Storage Temperature:	-40°C (-40°F) to +85°C (+185°F).
Shock:	15 G's in each of three mutually perpendicular planes.
Vibration:	1 G at 5 to 26 Hz. 0.036" double amplitude at 27 to 52 Hz. 5 G's at 53 to 500 Hz.
Size:	See Section 3, *Installation Instructions*, for overall dimensions.
Weight:	1.5 pounds.

SECTION 2 • FUNCTIONAL DESCRIPTION

GENERAL

The following paragraphs describe the functions of the circuits shown in the block diagram, Figure 2-1.

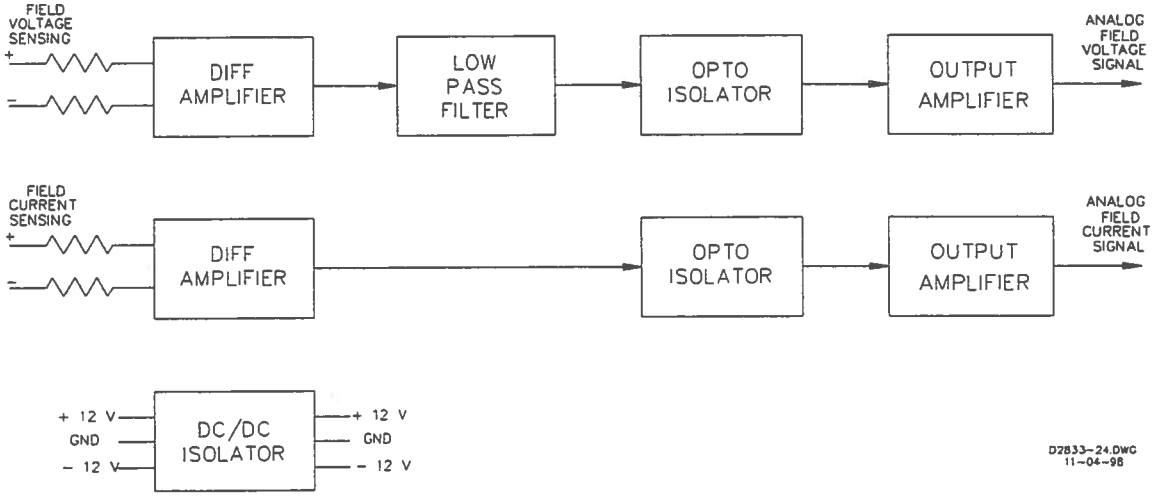

Figure 2-1. DECS-300 Isolation Module Functional Block Diagram

Operating Power

Operating voltage, + 12 and - 12 Vdc from the DECS-300 is applied to the isolation module at signal port J1 on the front panel. J1 is a 15-pin, D-sub connector. Input power is isolated from the internal isolation module operating power through the DC-to-DC convertor.

Field Voltage Sensing

There are five field voltage sensing ranges: 32, 63, 125, 250, and 375 volts. Each range has a positive and negative terminal located on the isolation module front panel, and is designed to sense plus or minus 300% of the nominal voltage. The sensed field voltage is applied to a differential amplifier. Output voltage from the differential amplifier is low-pass filtered and optically coupled to the output amplifier. From the output amplifier, the analog output field voltage signal is connected to the 15-pin D-sub connector and the DECS-300. The analog output field voltage signal is a positive dc voltage in the range of 0.9 to 9.1 volts with 5.0 volts equal to zero field voltage.

Field Current Sensing

There are two field current sensing ranges: 50 and 100 millivolts. Each range has a positive and negative terminal located on the isolation module front panel, and accepts voltage outputs from current shunts or current transducers. The field current sensing circuits are designed to accept up to 300% of the nominal current range. The field current signal is applied to a differential amplifier with the output optically coupled to the output amplifier. From the output amplifier, the analog output field current signal is connected to the 15-pin D-sub connector and the DECS-300. The analog output field current signal is a positive dc voltage in the range of 2.0 to 9.5 volts with 2.0 volts equal to zero field current.

SECTION 3 • INSTALLATION INSTRUCTIONS

MOUNTING

DECS-300 Isolation Modules may be mounted vertically or horizontally. The unit may be mounted anywhere that the ambient temperature does not exceed the environmental conditions (refer to Section 1 for the environmental conditions). Figure 3-1 shows the overall dimensions and hole locations for mounting the Isolation Module.

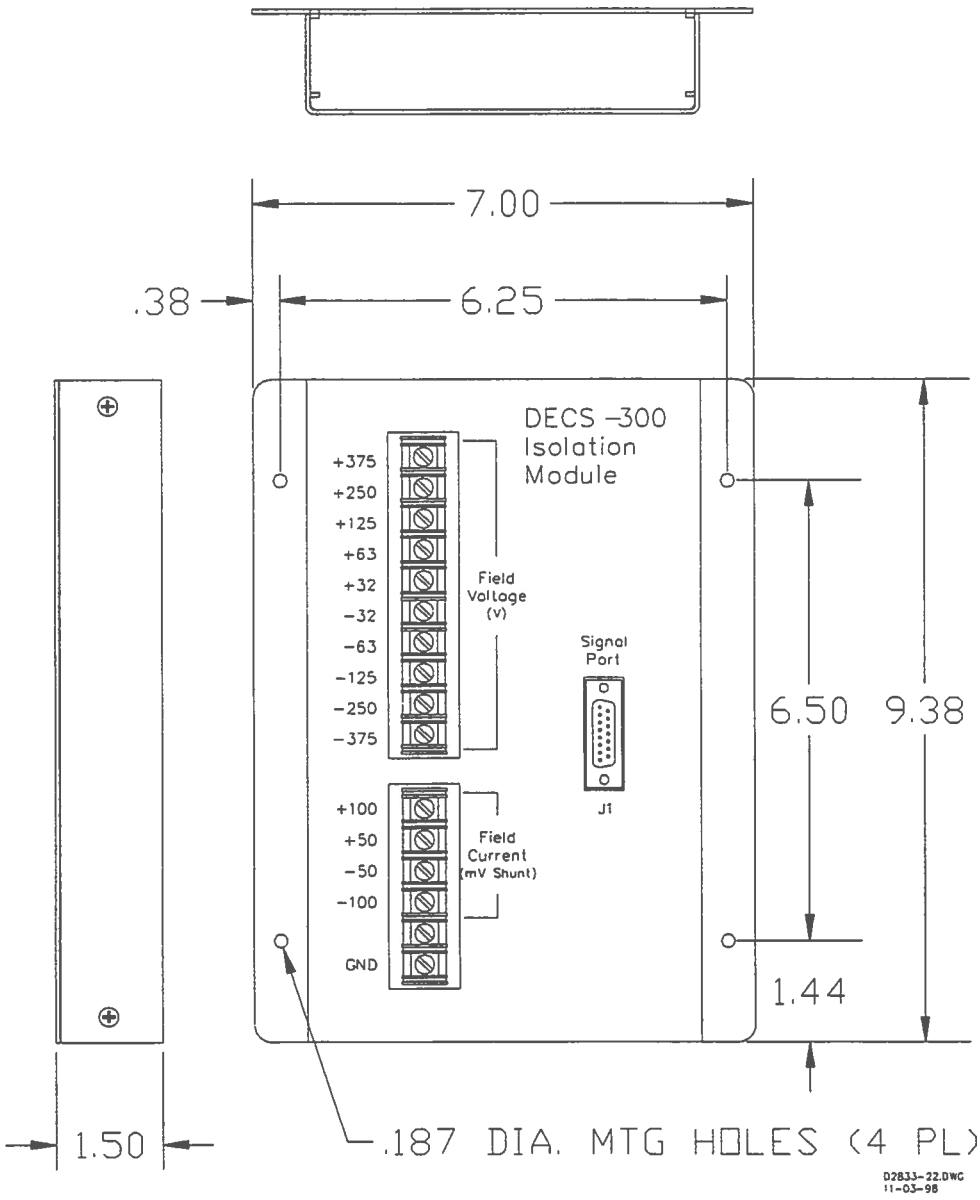

Figure 3-1. DECS-300 Isolation Module Overall Dimensions

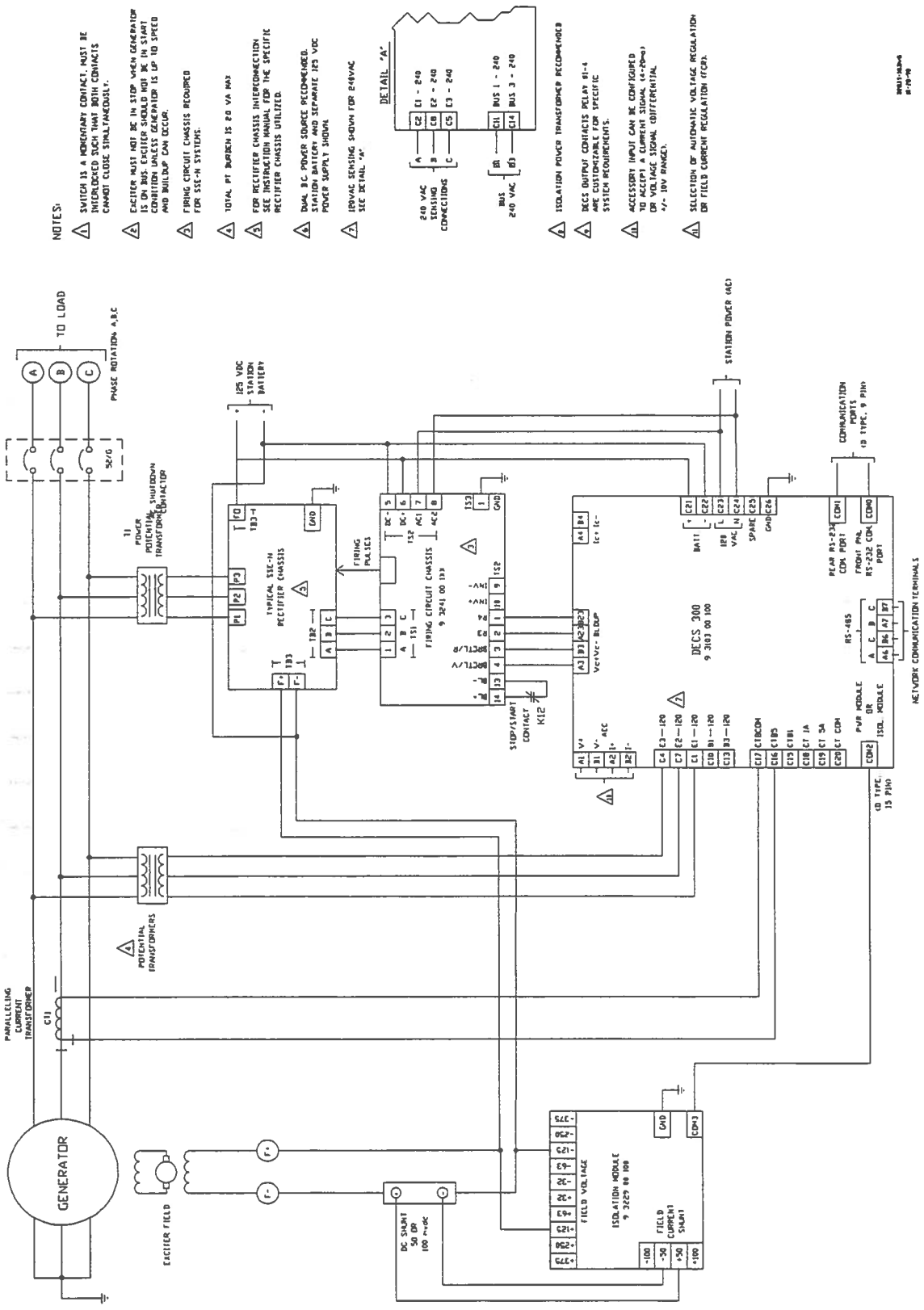

Figure 3-2. DECS-300 Isolation Module Typical Interconnection Diagram

SECTION 4 • MAINTENANCE INSTRUCTIONS

PREVENTIVE MAINTENANCE

Periodic Inspections of the DECS-300 Isolation Module should be made to ensure that it is clean and free from dirt and moisture. It is recommended that the connections between the Isolation Module and the rest of the excitation system be checked to ensure that all connections are clean and tight.

WARRANTY AND REPAIR SERVICE

The DECS-300 Isolation Module is fully warranted against defective material and workmanship for 18 months from the date of initial equipment shipment. A complete service center at the Basler Electric factory in Highland, Illinois is setup to provide a prompt turn-around on parts, warranty, and non-warranty repairs. Contact the Basler Electric Customer Service Department for further details on returning equipment for repair.